MANUFACTURE OF NITRIDE SEMICONDUCTOR LASER ELEMENT

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Inventor(s): SANO MASAHIKO; YAMADA TAKAO; SUGIMOTO YASUNOBU; NAKAMURA SHUJI
Applicant(s): NICHIA CHEM IND LTD
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Abstract

PROBLEM TO BE SOLVED: To provide a method for obtaining a laser beam whose far-field pattern is satisfactory and efficiency is good at extracting of the laser beam, and a method for reducing the warpage of a substrate which occurs at grinding, so that grinding and scribing can be easily executed at the cutting of a nitride semiconductor wafer, where sapphire is set to be the substrate into a chip form by making a nitride semiconductor laser into an element.
SOLUTION: Etching is executed from the p-type layer side of a nitride semiconductor wafer, where an n-type layer 2, an active layer 3 and a p-type layer 4 are sequentially stacked on a substrate 1. A first process, in which the surface of the n-type layer is exposed and a resonance face is formed on an etching end face, a second process in which a groove for separating laser chips is formed on the surface of the n-type layer exposed by the first processes and a third process in which the corner part on the surface of the n-type layer, which is located at the upper part of the groove and exposed by the first process, is removed so that a spreading angle of the laser beam which does not become less than 30 degrees.